



(11) **EP 2 042 893 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
15.12.2010 Bulletin 2010/50

(51) Int Cl.:
G02B 5/08 (2006.01) **H01S 3/08 (2006.01)**
G02B 5/28 (2006.01)

(43) Date of publication A2:
01.04.2009 Bulletin 2009/14

(21) Application number: **08017016.0**

(22) Date of filing: **26.09.2008**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR
Designated Extension States:
AL BA MK RS

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(30) Priority: **28.09.2007 JP 2007254237**
28.09.2007 JP 2007254238
28.09.2007 JP 2007254239

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(54) **Negative dispersion mirror and mode-locked solid-state laser apparatus including the mirror**

(57) A negative dispersion mirror (5) can generate large negative group-velocity dispersion and it can be used as an output mirror of a solid-state laser apparatus. The mirror (5) includes a substrate (6) and a dielectric multilayer coating structure (7) formed on the substrate (6). The multilayer coating structure (7) includes two mirror-function layer portions (ML₁, ML₂), each formed by a plurality of layers deposited one on another, and a cavity layer (C) that is arranged between the two mirror-function layer portions (ML₁, ML₂), and which causes light (L) having a predetermined wavelength to resonate between the two mirror-function layer portions (ML₁, ML₂). Further, a dispersion value with respect to the light (L) having the predetermined wavelength is in the range of -600fs² to -3000fs² and a reflectance with respect to the light (L) having the predetermined wavelength is in the range of 97% to 99.5%.

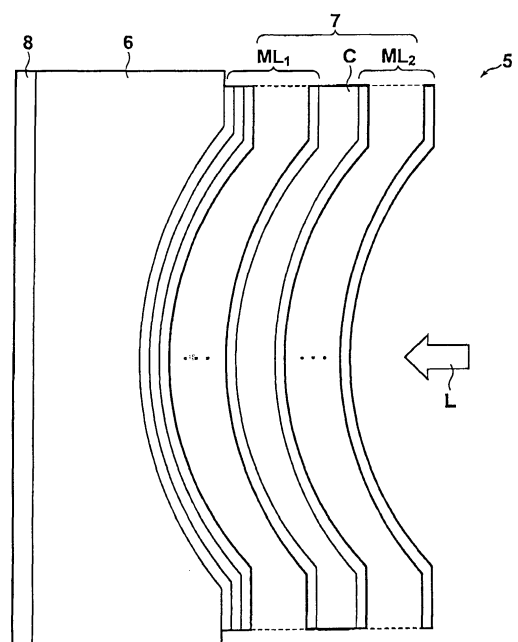


FIG.8

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EUROPEAN SEARCH REPORT

Application Number
EP 08 01 7016

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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 7 October 2010	Examiner Mollenhauer, Ralf
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EPO FORM 1503 03.82 (P04C01)



EUROPEAN SEARCH REPORT

Application Number
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Place of search Munich		Date of completion of the search 7 October 2010	Examiner Mollenhauer, Ralf
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**ANNEX TO THE EUROPEAN SEARCH REPORT
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